

=> fil reg

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STRUCTURE FILE UPDATES: 10 DEC 2007 HIGHEST RN 957336-90-2  
 DICTIONARY FILE UPDATES: 10 DEC 2007 HIGHEST RN 957336-90-2

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TSCA INFORMATION NOW CURRENT THROUGH June 29, 2007

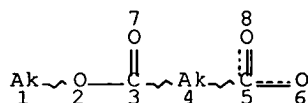
Please note that search-term pricing does apply when  
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 experimental property data in the original document. For information  
 on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stndoc/properties.html>

=> d que stat l28

L23 STR



#### NODE ATTRIBUTES:

CONNECT IS E1 RC AT 1  
 DEFAULT MLEVEL IS ATOM  
 GGCAT IS SAT AT 1  
 GGCAT IS SAT AT 4  
 DEFAULT ECLEVEL IS LIMITED

#### GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 8

#### STEREO ATTRIBUTES: NONE

L26 SCR 2043 OR 2127 OR 1918 OR 1838  
 L28 26130 SEA FILE=REGISTRY SSS FUL L23 NOT L26

100.0% PROCESSED 140477 ITERATIONS ( 4 INCOMPLETE) 26130 ANSWERS  
 SEARCH TIME: 00.00.04

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(FILE 'HOME' ENTERED AT 15:25:54 ON 11 DEC 2007)

FILE 'HCAPLUS' ENTERED AT 15:26:08 ON 11 DEC 2007  
L1 1 SEA ABB=ON PLU=ON US2006178283/PN  
SEL RN

FILE 'REGISTRY' ENTERED AT 15:26:34 ON 11 DEC 2007  
L2 5 SEA ABB=ON PLU=ON (102-76-1/BI OR 106-65-0/BI OR  
124-38-9/BI OR 627-93-0/BI OR 6525-53-7/BI)  
D SCA

FILE 'LREGISTRY' ENTERED AT 15:35:17 ON 11 DEC 2007  
L3 STR

FILE 'REGISTRY' ENTERED AT 15:42:25 ON 11 DEC 2007  
L4 SCR 2043 OR 2127  
L5 50 SEA SSS SAM L3 NOT L4  
L6 STR L3  
L7 50 SEA SSS SAM L6 NOT L4  
L8 SCR 1918 OR 1929 OR 2016 OR 2026 OR 2021  
L9 50 SEA SSS SAM L6 NOT L4 NOT L8  
L10 SCR 1918 OR 1929 OR 2016 OR 2026 OR 2021 OR 1573  
L11 50 SEA SSS SAM L6 NOT L4 NOT L10  
L12 SCR 1918 OR 1929 OR 2016 OR 2026 OR 2021 OR 1573 OR 1701  
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L15 SCR 1918 OR 1929 OR 2016 OR 2026 OR 2021 OR 1838  
L16 50 SEA SSS SAM L3 NOT L4 NOT L15  
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L19 STR L3  
L20 50 SEA SSS SAM L19 NOT L4 NOT L15  
L21 SCR 1918 OR 1929 OR 2016 OR 2026 OR 2021 OR 1838 OR 2040  
L22 50 SEA SSS SAM L19 NOT L4 NOT L21

FILE 'LREGISTRY' ENTERED AT 16:06:21 ON 11 DEC 2007  
L23 STR

FILE 'REGISTRY' ENTERED AT 16:08:49 ON 11 DEC 2007  
L24 SCR 2043 OR 2127 OR 1918  
L25 50 SEA SSS SAM L23 NOT L24  
L26 SCR 2043 OR 2127 OR 1918 OR 1838  
L27 50 SEA SSS SAM L23 NOT L26  
L28 26130 SEA SSS FUL L23 NOT L26  
L29 3 SEA ABB=ON PLU=ON L2 AND L28  
SAV L28 TEMP ASD921/A  
E CARBON DIOXIDE/CN  
L30 1 SEA ABB=ON PLU=ON "CARBON DIOXIDE"/CN

FILE 'HCAPLUS' ENTERED AT 16:13:54 ON 11 DEC 2007  
L31 12897 SEA ABB=ON PLU=ON (L30 OR CO2 OR CARBON(W)DIOXIDE) (5A) (  
LIQ# OR LIQUID? OR LIQU!F?)  
L32 72253 SEA ABB=ON PLU=ON L28  
L33 35 SEA ABB=ON PLU=ON L31 AND L32  
L34 QUE ABB=ON PLU=ON WEIGHT OR WT##  
L35 4 SEA ABB=ON PLU=ON L33 AND L34  
L36 QUE ABB=ON PLU=ON (CLEAN? OR LAUND?) (3A) (ADDITIVE? OR  
ADJUVANT? OR AUXILIAR? OR MEDIUM?)  
L37 11 SEA ABB=ON PLU=ON L31 AND L36  
L38 3 SEA ABB=ON PLU=ON L37 AND L34  
L39 6 SEA ABB=ON PLU=ON L35 OR L38  
L40 QUE ABB=ON PLU=ON ?CLEAN? OR LAUND?

L41 2 SEA ABB=ON PLU=ON L33 AND L40  
L42 7 SEA ABB=ON PLU=ON L39 OR L41  
L43 30 SEA ABB=ON PLU=ON L33 NOT L42  
L44 24 SEA ABB=ON PLU=ON L43 AND (PY<=2002 OR PRY<=2003 OR  
AY<=2003)

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E US20060178283/PN

L45 1 SEA ABB=ON PLU=ON US20060178283/PN

D IFULL

L46 5151 SEA ABB=ON PLU=ON (CO2 OR CARBON(W)DIOXIDE) (3A) (LIQ#  
OR LIQUID? OR LIQU!F?)

L47 27 SEA ABB=ON PLU=ON L46 AND L36

L48 9 SEA ABB=ON PLU=ON L47 AND L34

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D SCA

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FILE 'JAPIO' ENTERED AT 16:34:19 ON 11 DEC 2007

L51 2 SEA ABB=ON PLU=ON L46 AND L36

D SCA

FILE 'PASCAL' ENTERED AT 16:35:21 ON 11 DEC 2007

L52 0 SEA ABB=ON PLU=ON L46 AND L36

=> fil hcap

FILE 'HCAPLUS' ENTERED AT 16:37:27 ON 11 DEC 2007

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FILE COVERS 1907 - 11 Dec 2007 VOL 147 ISS 25

FILE LAST UPDATED: 10 Dec 2007 (20071210/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d l42 ibib abs hitstr hitind 1-7

L42 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:169491 HCAPLUS Full-text

DOCUMENT NUMBER: 144:256872

TITLE: Gelled liquid hydrocarbon treatment fluids

having reduced phosphorus volatility and their associated methods of use and preparation

INVENTOR(S): Funkhouser, Gary P.  
 PATENT ASSIGNEE(S): Halliburton Energy Services, Inc., USA  
 SOURCE: U.S. Pat. Appl. Publ., 11 pp.  
 CODEN: USXXCO

DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2006037754	A1	20060223	US 2004-920821	20040818
US 7066262	B2	20060627		
CA 2514140	A1	20060218	CA 2005-2514140	20050729
PRIORITY APPLN. INFO.:			US 2004-920821	A 20040818

OTHER SOURCE(S): MARPAT 144:256872

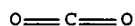
AB This invention relates to reduced volatility gelled liquid hydrocarbon treatment fluids and methods of their use and preparation. In one embodiment, this invention provides a method of treating a portion of a subterranean formation comprising: providing a reduced volatility gelled liquid hydrocarbon treatment fluid that comprises a liquid hydrocarbon and a gelling agent that comprises a polyvalent metal salt of a phosphoric acid ester, and treating the portion of the subterranean formation with the reduced volatility gelled liquid hydrocarbon treatment fluid. In another embodiment, this invention provides a gelled liquid hydrocarbon treatment fluid: that comprises a liquid hydrocarbon and a gelling agent that comprises a polyvalent metal salt of a phosphoric acid ester; that has a concentration of less than about 250 mg/L of trialkyl phosphate esters that have a mol. weight of less than about 350; and that has a diester-to-monoester content molar ratio of at least about 2:1.

IT 124-38-9, Carbon dioxide, uses  
 2373-23-1, Dioctyl sulfosuccinate

RL: TEM (Technical or engineered material use); USES (Uses)  
 (gelled liquid hydrocarbon treatment fluids having reduced phosphorus volatility and their associated methods of use and preparation)

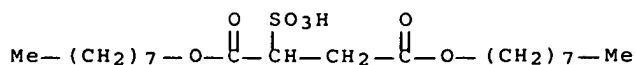
RN 124-38-9 HCAPLUS

CN Carbon dioxide (CA INDEX NAME)



RN 2373-23-1 HCAPLUS

CN Butanedioic acid, 2-sulfo-, 1,4-dioctyl ester (CA INDEX NAME)



INCL 166308100; 166312000

CC 51-2 (Fossil Fuels, Derivatives, and Related Products)

IT 50-81-7, Ascorbic acid, uses 60-24-2, 2-Mercaptoethanol 68-11-1,  
Thioglycolic acid, uses 102-71-6, Triethanolamine, uses  
102-81-8, N,N-Dibutyl ethanol amine 124-38-9,Carbon dioxide, uses 128-04-1, Sodium  
dimethyldithiocarbamate 148-18-5, Sodium diethyldithiocarbamate  
1184-66-3 1309-48-4, Magnesium oxide, uses 2373-23-1,  
Dioctyl sulfosuccinate 4450-94-6, Monoammonium citrate 5470-11-1  
7681-11-0, Potassium iodide, uses 7681-53-0, Sodium hypophosphite  
7732-18-5, Water, uses 7757-83-7, Sodium sulfite 7772-98-7,  
Sodium thiosulfate 7772-99-8, Stannous chloride, uses 7775-14-6,  
Sodium dithionite 28299-33-4, Imidazoline 51344-62-8

RL: TEM (Technical or engineered material use); USES (Uses)

(gelled liquid hydrocarbon treatment fluids having  
reduced phosphorus volatility and their associated methods of use  
and preparation)REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE  
FOR THIS RECORD. ALL CITATIONS AVAILABLE  
IN THE RE FORMAT

L42 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:965450 HCAPLUS Full-text

DOCUMENT NUMBER: 141:397321

TITLE: Use of prespotters to improve the textile  
cleaning performance of dry  
cleaning systems

INVENTOR(S): Motson, Harold Russell

PATENT ASSIGNEE(S): Imperial Chemical Industries PLC, UK

SOURCE: PCT Int. Appl., 14 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004097103	A2	20041111	WO 2004-GB1768	200404 26
WO 2004097103	A3	20050120		
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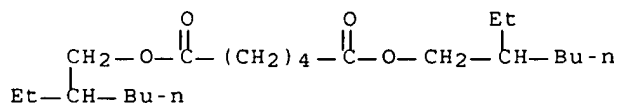
200404  
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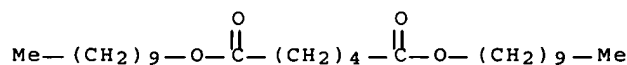
IT 103-23-1, Di(2-ethylhexyl) adipate 105-97-5,
    Didecyl adipate
    RL: TEM (Technical or engineered material use); USES (Uses)
        (use of prespotters to improve textile cleaning
        performance of dry cleaning systems)
RN 103-23-1 HCAPLUS
CN Hexanedioic acid, 1,6-bis(2-ethylhexyl) ester (CA INDEX NAME)

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RN 105-97-5 HCAPLUS

CN Hexanedioic acid, 1,6-didecyl ester (CA INDEX NAME)



IC ICM D06L001-00

CC 46-6 (Surface Active Agents and Detergents)

ST textile cleaning liq carbon

dioxide prespotter polyoxyalkylene alkyl ether; ethylhexyl

benzoate prespotter textile cleaning liq

carbon dioxide

IT Surfactants

(anionic; use of prespotters to improve textile cleaning performance of dry cleaning systems)

IT Detergents

(cleaning compns., prespotters; use of prespotters to improve textile cleaning performance of dry cleaning systems)

IT Carboxylic acids, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(dicarboxylic, esters; use of prespotters to improve textile cleaning performance of dry cleaning systems)

IT Detergents

(laundry, prespotters; use of prespotters to improve textile cleaning performance of dry cleaning systems)

IT Polyoxyalkylenes, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(mono(alkyl group)-terminated; use of prespotters to improve textile cleaning performance of dry cleaning systems)

IT Surfactants

(nonionic; use of prespotters to improve textile cleaning performance of dry cleaning systems)

IT 124-38-9, Carbon dioxide, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(liquid; use of prespotters to improve textile cleaning performance of dry cleaning systems)

IT 103-23-1, Di(2-ethylhexyl) adipate 105-97-5,

Didecyl adipate 5444-75-7, 2-Ethylhexyl benzoate 9038-95-3,

Ethylene oxide-Propylene oxide copolymer monobutyl ether

27178-16-1, Diisodecyl adipate 99821-01-9, Atlas G 5000

RL: TEM (Technical or engineered material use); USES (Uses)

(use of prespotters to improve textile cleaning performance of dry cleaning systems)

L42 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:183081 HCAPLUS Full-text

DOCUMENT NUMBER: 140:219311  
 TITLE: Liquid carbon dioxide dry cleaning system using fatty branched polyalkoxylate fabric conditioning agents  
 INVENTOR(S): Motson, Harold Russell; Irvine, Derek John; Huntley, Steven  
 PATENT ASSIGNEE(S): Imperial Chemical Industries PLC, UK  
 SOURCE: PCT Int. Appl., 16 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004018764	A1	20040304	WO 2002-GB3828	20020820
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2495217	A1	20040304	CA 2002-2495217	20020820
AU 2002321505	A1	20040311	AU 2002-321505	20020820
EP 1546448	A1	20050629	EP 2002-755209	20020820
JP 2005535797	T	20051124	JP 2004-530317	20020820
US 2006107467	A1	20060525	US 2005-525042	20050829
PRIORITY APPLN. INFO.:			WO 2002-GB3828	W 20020820

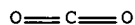
OTHER SOURCE(S): MARPAT 140:219311

AB The dry cleaning method comprises the steps of (I) conditioning textile materials with a treatment medium based on liquid CO<sub>2</sub> containing 0.001-2.5 wt% of the treatment medium of a conditioning agent which includes at least one fatty alc. or fatty acid branched polyalkyloxylate, shown by R1O(AO)mR2 (e.g., C24 guerbet alc. 5-propoxylate), where R1 is C8 to C30 aliphatic hydrocarbonyl or acyl; AO is predominantly branched alkyleneoxy, particularly propyleneoxy;



m is from 2 to 50; and R2 is H or a is C1 to C4 aliphatic hydrocarbyl or acyl. The cleaning medium may include detergent surfactant and/or non-surfactant cleaning additive or may be free from such additives in which case the treatment can be provided in a rinse cycle in a cleaning process.

IT 124-38-9, Carbon dioxide, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (liquid; method of dry cleaning using liquid  
 carbon dioxide and fatty branched  
 polyalkoxylate conditioning agents)  
 RN 124-38-9 HCAPLUS  
 CN Carbon dioxide (CA INDEX NAME)



IC ICM D06L001-00  
 CC 40-9 (Textiles and Fibers)  
 ST liq carbon dioxide dry cleaning fatty  
 branched polyalkoxylate  
 IT Fatty acids, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (alkoxylated, branched, fabric softeners; method of dry cleaning  
 using liquid carbon dioxide and fatty  
 branched polyalkoxylate conditioning agents)  
 IT Fatty acids, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (branched, alkoxylated, fabric softeners; method of dry cleaning  
 using liquid carbon dioxide and fatty  
 branched polyalkoxylate conditioning agents)  
 IT Textiles  
 (cotton; method of dry cleaning using liquid  
 carbon dioxide and fatty branched  
 polyalkoxylate conditioning agents)  
 IT Polyester fibers, miscellaneous  
 RL: MSC (Miscellaneous)  
 (fabrics; method of dry cleaning using liquid  
 carbon dioxide and fatty branched  
 polyalkoxylate conditioning agents)  
 IT Alcohols, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (fatty, alkoxylated, branched, fabric softeners; method of dry  
 cleaning using liquid carbon dioxide  
 and fatty branched polyalkoxylate conditioning agents)  
 IT Dry cleaning  
 Fabric softeners  
 Textiles  
 (method of dry cleaning using liquid carbon  
 dioxide and fatty branched polyalkoxylate conditioning  
 agents)  
 IT Polyoxyalkylenes, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (mono(fatty acyl)-terminated, branched, fabric softeners; method  
 of dry cleaning using liquid carbon  
 dioxide and fatty branched polyalkoxylate conditioning  
 agents)  
 IT 124-38-9, Carbon dioxide, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (liquid; method of dry cleaning using liquid

carbon dioxide and fatty branched  
polyalkoxylate conditioning agents)

IT 287473-87-4, Propoxylated C24 guerbet alcohol

RL: TEM (Technical or engineered material use); USES (Uses)  
(oligomeric, fabric softeners; method of dry cleaning using  
liquid carbon dioxide and fatty  
branched polyalkoxylate conditioning agents)

REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR  
THIS RECORD. ALL CITATIONS AVAILABLE IN  
THE RE FORMAT

L42 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:3092 HCAPLUS Full-text

DOCUMENT NUMBER: 140:61003

TITLE: Drycleaning of textiles using  
liquid carbon dioxide  
and cleaning additives

INVENTOR(S): Motson, Harold Russell; Irvine, Derek John;  
Appleman, Eric

PATENT ASSIGNEE(S): Imperial Chemical Industries PLC, UK

SOURCE: PCT Int. Appl., 14 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004001120	A1	20031231	WO 2002-GB2846	20020624
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CA 2488664	A1	20031231	CA 2002-2488664	20020624
AU 2002311463	A1	20040106	AU 2002-311463	20020624
EP 1516083	A1	20050323	EP 2002-738380	20020624
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2005530883	T	20051013	JP 2004-514992	20020624
CA 2488569	A1	20031231	CA 2003-2488569	20030624

WO 2004001119 A2 20031231 WO 2003-GB2703 200306  
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WO 2004001119 A3 20040902  
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH,  
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AU 2003244807 A1 20040106 AU 2003-244807 200306  
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EP 1518017 A2 20050330 EP 2003-738287 200306  
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EP 1518017 B1 20070725  
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,  
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JP 2005530884 T 20051013 JP 2004-515057 200306  
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AT 368145 T 20070815 AT 2003-738287 200306  
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US 2005288201 A1 20051229 US 2005-518916 200507  
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US 2006178283 A1 20060810 US 2005-518921 200507  
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PRIORITY APPLN. INFO.: WO 2002-GB2846 W 200206  
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WO 2003-GB2703 W 200306  
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## OTHER SOURCE(S): MARPAT 140:61003

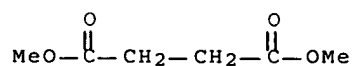
AB Detergent- or micelle-free cleaning media based on detergent-free and/or micelle-free liquid CO<sub>2</sub> and including 0.01-5 wt% of the formulation of a cleaning additive which is  $\geq 1$  multi-ester having a mol. weight of  $\leq 750$  can be used in dry cleaning of textiles. Desirable cleaning additives are of the formula: R<sub>1</sub>(XR<sub>2</sub>)<sub>n</sub> where X, R<sub>1</sub>, R<sub>2</sub>, and n have defined meanings, particularly to be esters of multi-carboxylic acids and mono-hydroxy alcs. or esters of mono-carboxylic acids and multi-hydroxy alcs.

IT 106-65-0, Dimethyl succinate 627-93-0, Dimethyl adipate 6525-53-7, Dimethyl glutamate

RL: NUU (Other use, unclassified); USES (Uses)  
(drycleaning of textiles using liquid carbon dioxide and cleaning additives)

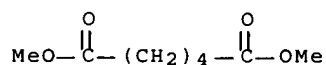
RN 106-65-0 HCAPLUS

CN Butanedioic acid, 1,4-dimethyl ester (CA INDEX NAME)



RN 627-93-0 HCAPLUS

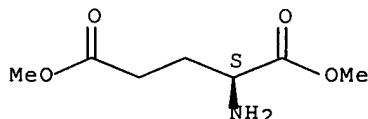
CN Hexanedioic acid, 1,6-dimethyl ester (CA INDEX NAME)



RN 6525-53-7 HCAPLUS

CN L-Glutamic acid, 1,5-dimethyl ester (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

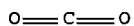


IT 124-38-9, Carbon dioxide, uses

RL: NUU (Other use, unclassified); USES (Uses)  
(liq; drycleaning of textiles using  
liquid carbon dioxide and  
cleaning additives)

RN 124-38-9 HCAPLUS

CN Carbon dioxide (CA INDEX NAME)



IC ICM D06L001-00

CC 40-8 (Textiles and Fibers)

ST liq carbon dioxide dimethyl adipate  
glutamate succinate drycleaning textile

IT Dry cleaning

(drycleaning of textiles using liquid  
carbon dioxide and cleaning  
additives)

IT 102-76-1, Triacetin 106-65-0, Dimethyl succinate  
627-93-0, Dimethyl adipate 6525-53-7, Dimethyl  
glutamate

RL: NUU (Other use, unclassified); USES (Uses)  
(drycleaning of textiles using liquid  
carbon dioxide and cleaning  
additives)

IT 124-38-9, Carbon dioxide, uses

RL: NUU (Other use, unclassified); USES (Uses)

(liq; drycleaning of textiles using  
liquid carbon dioxide and  
cleaning additives)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR  
THIS RECORD. ALL CITATIONS AVAILABLE IN  
THE RE FORMAT

L42 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1999:561501 HCAPLUS Full-text  
DOCUMENT NUMBER: 131:186881  
TITLE: Cleaning process using carbon dioxide as a  
solvent and employing molecularly engineered  
amphiphilic surfactants  
INVENTOR(S): Desimone, Joseph M.; Romack, Timothy; Betts,  
Douglas E.; McClain, James B.  
PATENT ASSIGNEE(S): The University of North Carolina at Chapel Hill,  
USA  
SOURCE: U.S., 8 pp., Cont.-in-part of U.S. 5,783,082.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 3  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5944996	A	19990831	US 1997-850371	199705 02
US 5783082	A	19980721	US 1995-553082	199511 03
US 6224774	B1	20010501	US 1999-249701	199902 12
PRIORITY APPLN. INFO.:			US 1995-553082	A2 199511 03
			US 1997-850371	A1 199705 02

AB A contaminant (e.g., inorg. compds., organic compds., polymers, particles) is separated from a substrate (e.g., a polymer, metal, ceramic, glass, or composite) that carries the contaminant by contacting the substrate with a CO<sub>2</sub> fluid (a liq. at <31°C, high-pressure gas at 20-73 bar, or high-temperature supercrit. gas) containing 0.001-30 weight% of an amphiphilic species so that the contaminant assoc. with the amphiphilic species and becomes entrained in the CO<sub>2</sub> fluid. The CO<sub>2</sub> serves as a second fluid to facilitate the transport of the contaminant from the substrate. The substrate is separated from the CO<sub>2</sub> fluid, and then the contaminant is separated from the CO<sub>2</sub> fluid. In an example, polystyrene was removed from an aluminum vessel using poly(1,1'-dihydroperfluorooctylacrylate)-b-6.6 kg/mol polystyrene block copolymer and CO<sub>2</sub> (at 200 bar, 40°C).

IC ICM B01D011-00

INCL 210634000

CC 48-11 (Unit Operations and Processes)

IT Polysiloxanes, uses

RL: MOA (Modifier or additive use); USES (Uses)  
 (di-Me, ethoxylated, cleaning additive;  
 cleaning process using CO2 containing molecularly engineered  
 amphiphilic surfactants)

## IT Liquids

(oils, contaminants; cleaning process using CO2 containing  
 molecularly engineered amphiphilic surfactants)

REFERENCE COUNT: 49 THERE ARE 49 CITED REFERENCES AVAILABLE  
 FOR THIS RECORD. ALL CITATIONS AVAILABLE  
 IN THE RE FORMAT

L42 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1996:280724 HCAPLUS Full-text

DOCUMENT NUMBER: 124:311788

TITLE: Glass capillary-enclosed carbon dioxide- and  
 proton-permeable membrane-based carbon  
 dioxide-sensitive microelectrodes

INVENTOR(S): Voipio, Juha Tuuri Immanuel

PATENT ASSIGNEE(S): Finland

SOURCE: Finn., 9 pp.  
 CODEN: FIXXAP

DOCUMENT TYPE: Patent

LANGUAGE: Finnish

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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FI 96140	B	19960131	FI 1993-1986	199305 03
FI 9301986	A	19941104		
FI 96140	C	19960510		
PRIORITY APPLN. INFO.:			FI 1993-1986	199305 03

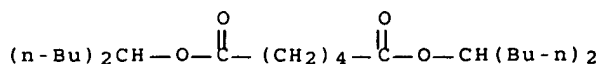
AB The filling solution in the micropipets contains carbonanhydrase enzyme and the sensor solution contains dissolved PVC, whereby a short response time is obtained. The sensor solution contains tridodecylamine 4.5, K tetrakis(4-chlorophenyl)borate 2.1, bis(1-butylpentyl)adipate 79.4, and poly(vinyl chloride) 14.0 **weight%**, dissolved in THF. Alternatively, the sensor solution contains tridodecylamine 8.6, Na tetraphenylborate 0.6, 2-nitrophenyl octyl ether 76.8, and poly(vinyl chloride) 14.0 **weight%**, dissolved in THF. The microelectrodes are used for determining the amount of dissolved CO2 in the liquid of organisms and biol. tissues.

IT 77916-77-9, Bis(1-butylpentyl)adipate

RL: TEM (Technical or engineered material use); USES (Uses)  
 (glass capillary-enclosed carbon dioxide- and proton-permeable  
 membrane-based carbon dioxide-sensitive microelectrodes)

RN 77916-77-9 HCAPLUS

CN Hexanedioic acid, 1,6-bis(1-butylpentyl) ester (CA INDEX NAME)



IC ICM G01N027-30  
 CC 9-1 (Biochemical Methods)  
 Section cross-reference(s): 79  
 ST microelectrode carbon dioxide detn; organism lig  
**carbon dioxide detn; biol tissue carbon dioxide**  
 detn  
 IT 102-87-4, Tridodecylamine 143-66-8, Sodium tetraphenylborate  
 9002-86-2, Poly(vinyl chloride) 14680-77-4, Potassium  
 tetrakis(4-chlorophenyl)borate 37682-29-4, 2-Nitrophenyl octyl  
 ether 77916-77-9, Bis(1-butylpentyl)adipate  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (glass capillary-enclosed carbon dioxide- and proton-permeable  
 membrane-based carbon dioxide-sensitive microelectrodes)

L42 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1951:52761 HCAPLUS Full-text

DOCUMENT NUMBER: 45:52761

ORIGINAL REFERENCE NO.: 45:8984c-h

TITLE: Some fundamental organic reactions. VIII. The  
 Bouveault-Locquin lactone-trimethylene-ring  
 rearrangement

AUTHOR(S): Matsui, Masanao; Hirase, Susumu

CORPORATE SOURCE: Kyoto Univ.

SOURCE: Nippon Kagaku Kaishi (1921-47) (1950), 71(Pure  
 Chem. Sect.), 426-30

CODEN: NIKWAB; ISSN: 0369-4208

DOCUMENT TYPE: Journal

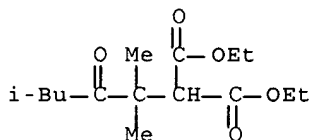
LANGUAGE: Unavailable

OTHER SOURCE(S): CASREACT 45:52761

AB cf. C.A. 45, 6593b. Bouveault and Locquin (C.A. 4, 915) reported that  
 condensation of butyrolin (I) with AcOEt by means of Na gave a product (II),  
 C<sub>10</sub>H<sub>16</sub>O<sub>2</sub>, which was regarded as a lactone, and that II was converted by CH<sub>2</sub>N<sub>2</sub>  
 to a compound (III), C<sub>11</sub>H<sub>18</sub>O<sub>2</sub>, which was assigned the structure of Me 2,3-  
 dipropyl-1-cyclopropene-1-carboxylate. M. and H. concluded on the basis of  
 the following syntheses and observations that II is 2-ethyl-4-propyl-1,3-  
 cyclopentanedione (IV) or its enolic form and III is a Me ether of II. II,  
 C<sub>10</sub>H<sub>16</sub>O<sub>2</sub> (mol. weight found 171), colorless crystals, m. 114.5-16°, b<sub>6</sub> 180-6°,  
 soluble in aqueous Na<sub>2</sub>CO<sub>3</sub> with evolution of CO<sub>2</sub>, gradually **liquefied**, turning  
 yellow, on keeping for a long time, reduced hot Fehling solution, and gave a  
 reddish brown coloration with FeCl<sub>3</sub> in 50% alc.; 2,4-dinitrophenylhydrazine,  
 m. 186-7°; monoacetate, C<sub>12</sub>H<sub>18</sub>O<sub>3</sub>, b<sub>7</sub> 121-3°. SOCl<sub>2</sub> with II in CCl<sub>4</sub> gave  
 C<sub>10</sub>H<sub>15</sub>OCl, b<sub>7</sub> 88°. Br was decolorized by II in CHCl<sub>3</sub> with evolution of HBr,  
 and the bromination product, which was very unstable, regenerated II on  
 treatment with Zn dust in MeOH. Ozonolysis of both II and III, C<sub>11</sub>H<sub>18</sub>O<sub>2</sub>, b<sub>6</sub>  
 132-5°, gave EtCO<sub>2</sub>H and α-propylsuccinic acid, m. 91-2°. I (62 g.), 180 g.  
 Ac<sub>2</sub>O, and 20 g. fused AcONa were refluxed 3 h., giving 72 g. acetylbutyrolin,  
 C<sub>10</sub>H<sub>18</sub>O<sub>3</sub>, b<sub>7</sub> 90-2°, d<sub>4</sub> 0.9634, n<sub>D</sub> 1.4330. This (20 g.) subjected to the  
 Reformatskii reaction with 16 g. CH<sub>2</sub>BrCO<sub>2</sub>Me and 14 g. Zn in 20 cc. C<sub>6</sub>H<sub>6</sub>, gave  
 13.5 g. of a crude product, b<sub>6</sub> 145-55°. Further fractionation gave Me 3-  
 acetoxy-2-propyl-2-hexene-1-carboxylate, C<sub>13</sub>H<sub>22</sub>O<sub>4</sub>, b<sub>8</sub> 148-50°, which was  
 saponified with 30% alc. KOH to β-butyrylcaproic acid, b<sub>5</sub>, 149-50°;  
 semicarbazone, m. 149-50.5° (from alc.). This acid with CH<sub>2</sub>N<sub>2</sub> in ether gave  
 the Me ester (V), b<sub>7</sub> 106-8°. The action of 0.95 g. powdered Na on 4 g. V in  
 100 cc. hot ether for 6 h. gave IV, m. 114-16°, identical with II. Di-Et  
 2,2,5,5-tetramethyl-3-pentanone-1,1-dicarboxylate, b<sub>6</sub> 130-4°, was prepared by  
 heating 46 g. CH<sub>2</sub>(CO<sub>2</sub>Et)<sub>2</sub>, 60 g. iso-BuCOBrMe<sub>2</sub> (Sacharowa, J. prakt. Chemical  
 [2] 88, 686(1913)), and 6.6 g. Na 3 h. in 100 cc. EtOH, and converted with 50%  
 aqueous NaOH to 2,2,5,5-tetramethyl-3-pentanone-1-carboxylic acid (VI), b<sub>6</sub>  
 140-5°, m. 70.2-71.0° (from petr. ether); Me ester, b<sub>7</sub> 88-90°. VI (5 g.) was

boiled 1 h. with 15 g. Ac<sub>2</sub>O, yielding β,β-dimethyl-γ-isobutylidenebutyrolactone (VII), C<sub>10</sub>H<sub>16</sub>O<sub>2</sub>, b<sub>18</sub> 110-13°, d<sub>294</sub> 0.9507, n<sub>29D</sub> 1.4439. By boiling with 25% alc. KOH VII was hydrolyzed to VI. CH<sub>2</sub>N<sub>2</sub> and VII in ether did not react, contrary to the expectation according to B. and L. It was concluded that the condensation of acyloins with AcOEt by means of Na proceeds by way of intermediate γ-ketocarboxylic esters, which subsequently undergo the intramol. Claisen condensation, giving 1,3-cyclopentanediones.

IT 92791-66-7P, Malonic acid, (1,1,4-trimethyl-2-oxopentyl)-, diethyl ester  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 92791-66-7 HCAPLUS  
 CN Malonic acid, (1,1,4-trimethyl-2-oxopentyl)-, diethyl ester (7CI)  
 (CA INDEX NAME)



CC 10 (Organic Chemistry)  
 IT 91007-07-7P, Heptanoic acid, 3,3,6-trimethyl-4-oxo-  
 92791-66-7P, Malonic acid, (1,1,4-trimethyl-2-oxopentyl)-, diethyl ester 408334-11-2P, 4-Octanone, 5-hydroxy-, acetate 408525-61-1P, 3-Heptenoic acid, 4-hydroxy-3-propyl-, methyl ester, acetate 855384-58-6P, 1,2-Cyclobutanedimethanol, 1,2-dihydroxy-α,α,α',α'-tetraphenyl- 855897-62-0P, Heptanoic acid, 3,3,6-trimethyl-4-oxo-, methyl ester 859446-15-4P, 2-Cyclopenten-1-one, 3-chloro-2-ethyl-5-propyl- 859446-88-1P, 2-Cyclopenten-1-one, 2-ethyl-3-methoxy-5-propyl- 872307-60-3P, 4-Heptenoic acid, 4-hydroxy-3,3,6-trimethyl-, γ-lactone  
 RL: PREP (Preparation)  
 (preparation of)

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L44 ANSWER 1 OF 24 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:162654 HCAPLUS Full-text  
 DOCUMENT NUMBER: 140:217295  
 TITLE: Preparation of ionic liquids containing a sulfonate anion  
 INVENTOR(S): Davis, James H. Jr.; Moulton, Roger  
 PATENT ASSIGNEE(S): Sachem, Inc., USA; University of South Alabama  
 SOURCE: PCT Int. Appl., 20 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2004016570

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 CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD,  
 GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ,  
 LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,  
 NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM,  
 TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW  
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 NE, SN, TD, TG

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EP 1554238

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PRIORITY APPLN. INFO.:

US 2002-404178P

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US 2002-404202P

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WO 2003-US25815

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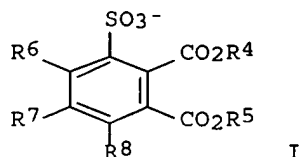
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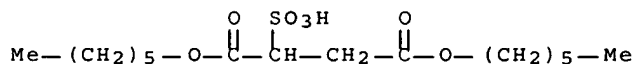
OTHER SOURCE(S):

MARPAT 140:217295

GI



- AB Claimed is an ionic liquid composition comprising a cation having >4 C atoms and an anion selected from  $R_1O_2CCH(SO_3^-)R_3CO_2R_2$  and benzenesulfonate [I;  $R_1$ ,  $R_2$ ,  $R_4$ ,  $R_5$  = (substituted) alkyl, alkenyl;  $R_6$ ,  $R_7$ ,  $R_8$  = H, alkyl,  $NO_2$ , halo, cyano, silyl, OH;  $R_1R_2$ ,  $R_4R_5$ ,  $R_6R_7$ ,  $R_7R_8$  = atoms to form a ring]. Thus, Na docusate (docusate = di-2-ethylhexyl ester of sulfosuccinic acid) and  $Bu_4NBr$  were stirred in  $H_2O$  to give 94% tetrabutylammonium docusate. Fuel and polymer compns. containing title compds. are claimed.
- IT 23243-42-7, Dihexyl sulfosuccinate  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of ionic liqs. containing a sulfonate anion)
- RN 23243-42-7 HCAPLUS
- CN Butanedioic acid, sulfo-, 1,4-dihexyl ester (9CI) (CA INDEX NAME)



- IC ICM C07C
- CC 23-17 (Aliphatic Compounds)  
 Section cross-reference(s): 37, 51
- IT 577-11-7, Sodium docusate 1643-19-2, Tetrabutylammonium bromide  
 23243-42-7, Dihexyl sulfosuccinate 154521-68-3  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of ionic liqs. containing a sulfonate anion)
- IT 124-38-9, Carbon dioxide, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (supercrit.; preparation of ionic liqs. containing a sulfonate anion)
- L44 ANSWER 2 OF 24 HCAPLUS COPYRIGHT 2007 ACS on STN
- ACCESSION NUMBER: 2002:515735 HCAPLUS Full-text
- DOCUMENT NUMBER: 137:95839
- TITLE: Carbon dioxide refrigerant  
 and liquid cofluid for use in a  
 refrigeration cycle with wet compression
- INVENTOR(S): Greenfield, Michael L.; Meyer, John J.;  
 Mozurkewich, George, Jr.; Schneider, William F.;  
 Stiel, Leonard I.
- PATENT ASSIGNEE(S): Visteon Global Technologies, Inc., USA; Ford  
 Global Technologies, Inc.
- SOURCE: U.S., 9 pp.  
 CODEN: USXXAM
- DOCUMENT TYPE: Patent
- LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

## PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6415614	B1	20020709	US 2001-840337	20010423

PRIORITY APPLN. INFO.:

US 2001-840337

20010423

AB A carbon dioxide/cofluid mixture for use in a refrigeration cycle in which the carbon dioxide is alternately absorbed and desorbed from the cofluid consists of 50-95% of cofluid and 5-50% of CO<sub>2</sub>. The cofluid has a thermal conductivity of > 0.14 W/m-K at 27°C. The cofluid can be preferably 3-pentanone, Me iso-Pr ketone, Et acetate, Pr acetate, cyclopentanone, cyclohexanone, propylene glycol diacetate, 1,5-pentanediol diacetate, di-Me malonate, di-Et malonate, di-Et succinate, di-Me glutarate, di-Me pimelate, di-Me Et malonate, di-Et Et malonate, di-Me Me succinate, diMe 3-Me glutarate, or their mixts.

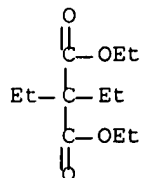
IT 77-25-8 105-53-3, Diethyl malonate  
 106-65-0, Dimethyl succinate 108-59-8, Dimethyl malonate 123-25-1, Diethyl succinate 133-13-1  
 141-28-6, Diethyl adipate 609-02-9  
 609-08-5 627-73-6, Methyl ethyl succinate  
 627-93-0, Dimethyl adipate 818-38-2, Diethyl glutarate 1117-19-7, Dipropyl malonate 1119-40-0  
 , Dimethyl glutarate 1604-11-1, Dimethyl methylsuccinate 1619-62-1 1732-08-7, Dimethyl pimelate  
 2050-20-6, Diethyl pimelate 4676-51-1, Diethyl methylsuccinate 6065-54-9 6186-89-6, Methyl ethyl malonate 13195-64-7, Diisopropyl malonate 17373-84-1 19550-58-4, Dimethyl 2,5-dimethyl adipate 19780-94-0, Dimethyl-2-methyladipate 26717-67-9 27132-23-6 32864-38-3  
 42726-73-8

RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)

(refrigerant; carbon dioxide refrigerant and liquid cofluid for use in a refrigeration cycle with wet compression)

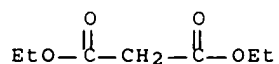
RN 77-25-8 HCAPLUS

CN Propanedioic acid, 2,2-diethyl-, 1,3-diethyl ester (CA INDEX NAME)



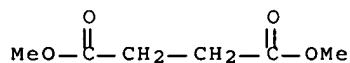
RN 105-53-3 HCAPLUS

CN Propanedioic acid, 1,3-diethyl ester (CA INDEX NAME)



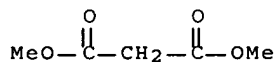
RN 106-65-0 HCAPLUS

CN Butanedioic acid, 1,4-dimethyl ester (CA INDEX NAME)



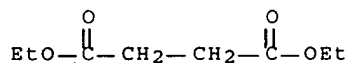
RN 108-59-8 HCAPLUS

CN Propanedioic acid, 1,3-dimethyl ester (CA INDEX NAME)



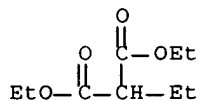
RN 123-25-1 HCAPLUS

CN Butanedioic acid, 1,4-diethyl ester (CA INDEX NAME)



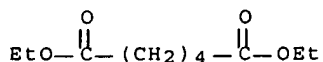
RN 133-13-1 HCAPLUS

CN Propanedioic acid, 2-ethyl-, 1,3-diethyl ester (CA INDEX NAME)



RN 141-28-6 HCAPLUS

CN Hexanedioic acid, 1,6-diethyl ester (CA INDEX NAME)



RN 609-02-9 HCAPLUS

CN Propanedioic acid, 2-methyl-, 1,3-dimethyl ester (CA INDEX NAME)